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**Commander, USACHPPM, ATTN: MCHB-CS-OHI, 5158 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010--5403**, or by using the E-mail address on the USACHPPM website at: <http://chppm-www.apgea.army.mil/mtb/>
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# OPERATION OPERATION JOINT JOINT FORGE GUARDIA

## PREVENTIVE MEDICINE BRIEFING

**Presenter's Name**  
**Presenter's Command**  
**Local Contact Information**



Prepared by:  
**U.S. Army Center for Health Promotion and Preventive  
Medicine**  
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**<http://usachppm.apgea.army.mil>**

# AGENDA

- Purpose
- Background
- Review of Guide to Staying Healthy
- Preparation for Deployment
- Deployment
- Medical Threat
- Post Deployment
- Country Profiles
- Leader Responsibilities
- Summary
- Conclusion



# **PURPOSE**

Inform Deploying Personnel  
(Military and Civilian) of the  
Potential Health Hazards and  
the Individual Countermeasures  
Necessary to Assure Personal  
Safety and Health



# BACKGROUND

- US Forces are mobilizing and deploying in support of Operations Joint Forge (SFOR) and Joint Guardian (KFOR)
- Environmental, safety, and occupational health hazards are a potential medical threat to deployed personnel



Historical accounts of wars, battles, and military training consistently relate that the greatest loss of forces was not caused by combat wounds – rather the majority of losses were the result of disease and non-battle injury (DNBI).

# GUIDE TO STAYING HEALTHY

## GTA 08-05-062

- Unfold YOUR *Guide to Staying Healthy*, Graphic Training Aid - GTA 08-05-062
- Personal Protective Measures (PPM)
  - Individual Countermeasures
- Reference Guide for this Briefing

**This guide is for use by all active/reserve component military, civilian, retiree, and contractor personnel. Any individual who trains and prepares for, or participates in any type of military operation should keep and refer to this guide.**



# PREPARING TO DEPLOY

- Medical, Dental & Vision Screening (Soldier Readiness Processing)
- Prepare clothing and gear and personal hygiene items
- Complete Pre-deployment Health Assessment (DD Form 2795)
- Immunizations and chemoprophylaxis



During medical screening, discuss prescribed medications with the examiner; obtain at least 90-day supply of medications

# PREPARING TO DEPLOY

## ADDITIONAL PACKING ITEMS:

- Cotton underwear (10 changes)
- Birth control supplies
- Personal Hygiene Products
- Anti-fungal cream/powder & shower shoes
- Insect repellent, sunscreen, eye and **hearing protection, lip balm, skin lotion**



If you need medications or hygiene items which may not be available through normal supply systems, obtain a 6-month supply, or enough for the duration of the operation

# PREPARING TO DEPLOY

## FEMALE CONSIDERATIONS

- Birth control pills
- Feminine Hygiene Products (non-deodorant tampons, sanitary napkins, panty liners; menstrual cramp reliever)
- Yeast infection medication (two courses of vaginal treatment)
- Portable Urinary Device

– For use by female personnel to reduce time needed to urinate and resolve privacy issues when latrines are not available (convoys, field operations)

If using birth control pills, continue as prescribed to regulate menstrual cycles and avoid problems resulting from inconsistent use

# DEPLOYMENT HEALTH CARE

- Know where to seek health care when deployed
- May or may not be through same channels as your home station
- Maintain your health and seek care whenever an illness or injury occurs



# PREVENTIVE MEDICINE COUNTERMEASURES

- Medical Tests – All Personnel
  - PPD – Purified Protein Derivative (TST – Tuberculin Skin Test)
    - Within 12 months prior to deployment
    - **AND** At time of redeployment
    - **AND** Again between 3-6 months after redeployment
  - HIV – Human Immunodeficiency Virus
    - Within 6 months prior to deployment
  - DNA-on file

TEST RESULTS

# IMMUNIZATION REQUIREMENTS

- All Personnel

- Hepatitis A
- Typhoid
- Tetanus-diphtheria
- Yellow fever
- Meningococcal
- Influenza
- Measles, Mumps, Rubella (MMR)
- Polio

- Selected Personnel

- Hepatitis B (medics, MPs, firefighters, combat lifesavers)
- Rabies (occupational risk of exposure)
- Pneumococcal (asplenic personnel)
- Anthrax (as directed from higher)



Confirm requirements with medical authority or OPORD

# FIELD SANITATION TEAM

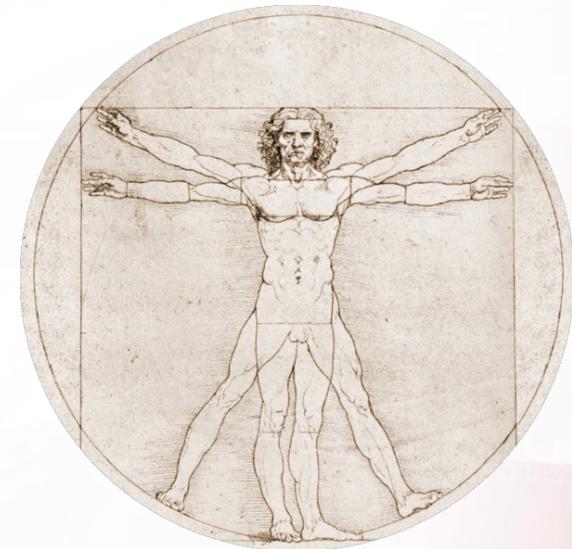
- Field Sanitation Teams (FST) train service members in Preventive Medicine Measures (PMM) and advise the commander and unit leaders on implementation of unit-level PMM.
- Know who the members of your Field Sanitation Team are PRIOR to deployment
- The FST can assist in preventing medical threats to your health
- Become familiar with FST equipment and training



Failure to apply the principles of PMM can result in mission failure

# MEDICAL THREAT

- Personal Health
- Endemic Diseases
- Occupational Threat
- Environmental Threat
- Non-Battle Injuries/Operational Safety
- Operational Stress



# PERSONAL PROTECTIVE MEASURES

- Wash hands frequently
- Do not rub eyes or inside of nose with bare finger(s)
- Bathe/shower regularly (field expedients will do); use unscented products
- Wear shower shoes to prevent athlete's foot
- Dry thoroughly after showering
- Sleep head-to-toe if billeted in common areas
- Wear clean, dry uniforms; change socks daily and uniform at least weekly
- Do not wear nylon or silk undergarments; cotton undergarments are more absorbent and allow the skin to dry
- Seek prompt medical care if problem exists



# SEXUAL ACTIVITY

- Abstinence is the only 100% effective method for preventing sexually transmitted diseases
- Choose an effective method of birth control
  - Always use condoms during sex – regardless of other measures you choose. Using latex or polyurethane condoms during each sexual encounter provides improved (98%) prevention against STD's and pregnancy.



# ORAL HEALTH

- Deploy with:
  - Toothbrush
  - Dental Floss
  - Fluoride Toothpaste
- Brush twice-daily
  - Daily In difficult tactical environments
- Floss daily
- Seek medical attention at the onset of any dental problems



# SPIRITUAL HEALTH

- Maintain personal prayer/meditation
- Obtain and read wholesome religious/spiritual literature
- Attend religious/spiritual group discussions/studies
- Process anger, fear, anxiety, & guilt through personal & group spiritual/religious activities
- Keep in touch with spiritual advisors/chaplains



# NUTRITION

- Drink fluids continuously (hourly fluid intake should not exceed  $1\frac{1}{2}$  quarts, daily fluid intake should not exceed 12 quarts)
- Maintain weight; do not avoid food or attempt weight loss during a deployment
- Work in cold weather can increase energy needs by 10-25%
- Operations in high-altitude areas can increase energy needs by 50% or more



# STRESS

- Operational stressors
- Different types and intensities
- Recognize the symptoms of depression
- Seek or encourage help
- Take steps to reduce operational stress

~~STRESS~~

Stress can be intensified for personnel who are exposed to or observe human suffering and/or death

# IMPROVE RESISTANCE TO STRESS

- Fear and physical signs or symptoms of stress are normal reactions before and during combat or other dangerous/life-threatening situations
- Talk about what is happening with your buddies
- Learn ways to relax quickly
- Quickly integrate new replacement
- If you must join a new group, be active in establishing friendships
- Give each other moral support
- Care for your buddies and work together



# CARBON MONOXIDE

- Carbon monoxide (CO) is a colorless, odorless, and tasteless gas produced by engines, stoves, and gas/oil heaters.
- CO replaces oxygen in the body, causing headache, sleepiness, coma, and death.



## COUNTERMEASURES

- Keep sleeping area windows slightly open for ventilation and air movement.
- DO NOT sleep in vehicles with the engine running or use engine exhaust for heat.
- DO NOT park vehicles near air intakes to tents, trailers, or ~~environmental control units~~.

Do not use unapproved commercial off-the-shelf heaters.  
Check with your unit Safety Officer.

# COLD INJURY PREVENTION

- Hypothermia, Frostbite, Chilblains

## COUNTERMEASURES

- When possible, remain inside warming tents/buildings and drink warm, non-caffeinated liquids for relief from the cold
- If working outside or on guard duty, insulate yourself from the ground and wind. Rotate duty as frequently as mission allows.
- Properly wear the Extended Cold Weather Clothing System



**You should receive annual unit training on prevention of cold injury**

24

v1.0

# COLDER

- C:** Keep clothing Clean
- O:** Avoid Overheating.
- L:** Wear clothing Loose and in layers
- D:** Keep clothing as Dry as possible
- E:** Examine clothing for holes, tears, and broken fasteners
- R:** Repair or replace damaged clothing



**Notify your first-line supervisor if you have had a previous cold injury. Use the buddy system.**

# WIND CHILL TEMPERATURE

Wind  
Speed (mph)  
↓

	Air Temperature (°F)																	
	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95

Wind speed based on measures at 33 feet height. If wind speed measured at ground level multiply by 1.5 to obtain wind speed at 33 feet and then utilize chart.

## RISK OF FROSTBITE

GREEN - LITTLE DANGER (frostbite occurs in >2 hours in dry, exposed skin)

YELLOW - INCREASED DANGER (frostbite could occur in 45 minutes or less in dry, exposed skin)

RED - GREAT DANGER (frostbite could occur in 5 minutes or less in dry, exposed skin)

**WET SKIN CAN SIGNIFICANTLY DECREASE THE TIME FOR FROSTBITE TO OCCUR**

# HEAT INJURY PREVENTION

- Heat Cramps, Exhaustion, or Stroke

## COUNTERMEASURES

- Drink fluids continuously (hourly fluid intake should not exceed  $1\frac{1}{2}$  quarts, daily fluid intake should not exceed 12 quarts)
- Maintain acclimatization
- Protect yourself from exposure to sunlight and wind
- Maintain good physical condition
- Establish work/rest schedules
- Wear proper clothing
- Participate in training



**You should receive annual unit training on prevention of heat injury. Heat injuries are preventable!**

# HEAT

**H:** Heat category – WBGT Index

**E:** Exertion level

**A:** Acclimatization

**T:** Tables – Water/Work/Rest

**REMEMBER**

**Water requirements are not reduced by any form of training or acclimatization.**

**Units which have soldiers who do not drink because they do not have opportunities to urinate have a leadership problem.**

# HEAT INJURY PREVENTION

## Fluid Replacement Guidelines for Warm Weather Training

(Applies to average heat acclimated soldier wearing BDU, Hot Weather)

Heat Category	WBGT Index, °F	Easy Work		Moderate Work		Hard Work	
		Work/Rest	Water Intake, Qt/hr	Work/Rest	Water Intake, Qt/hr	Work/Rest	Water Intake, Qt/hr
1	78-81.9	NL	1/2	NL	3/4	40/20 min	3/4
2 (Green)	82-84.9	NL	1/2	50/10 min	3/4	30/30 min	1
3 (Yellow)	85-87.9	NL	3/4	40/20 min	3/4	30/30 min	1
4 (Red)	88-89.9	NL	3/4	30/30 min	3/4	20/40 min	1
5 (Black)	>90	50/10 min	1	20/40 min	1	10/50 min	1



- The work rest times and fluid replacement volumes hydration volumes will sustain performance for at least 4 hours of work in the specified heat category. Individual water needs will vary approx  $\frac{1}{4}$  qt or 8 ounces per hour.
- NL=no limit to work time per hour.
- Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.
- **CAUTION: Hourly fluid intake should not exceed  $1\frac{1}{2}$  quarts.**  
**Daily fluid intake should not exceed 12 quarts.**
- Wearing body armor adds 5 degrees Fahrenheit to WBGT Index
- Wearing MOPP overgarment add 10 degrees Fahrenheit to WBGT Index.

# SUNBURN

- Prevent overexposing skin and eyes to solar radiation and wind

## COUNTERMEASURES

- Use sunscreen and lip balm
- Use protective eyewear
- Limit exposure



**Sunburn reduces soldier readiness and dry gases  
the likelihood of skin cancer.**

# HIGH ELEVATIONS

- High Altitude-elevations over 6,000 feet
  - High Altitude illnesses can kill
  - Stage ascents over time
  - Environmental conditions are more severe at higher elevations
    - Lower oxygen levels (“thin air”)
    - Colder temperatures, high winds, low visibility
    - Ice, snow, rocks, avalanches
  - Remain well hydrated



Be observant of the common symptoms of mountain sickness: headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately if you experience any of these symptoms.

# **SAND, DUST, AND WIND**

## **(NUMBER ONE COMPLAINT)**

- Sand, wind, and dust cause health problems, particularly to skin, eyes, throat and lungs
- High winds create flying object hazards which may not be visible in blowing sand or dust
- Wash daily, especially body areas that collect dust and sand
- Protect lips with lip balm and use moisturizing skin lotion on your hands to prevent cracked, chapped fingers
- Shield your face with cloth materials to protect from blowing dust and sand
- Protect your eyes

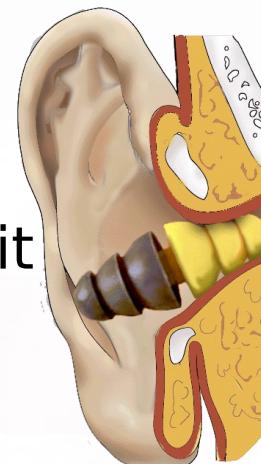


# HEARING CONSERVATION

- Loud noise causes permanent hearing loss

## COUNTERMEASURES

- Have your hearing protection with you at all times and use it
- Be sure your ear plugs, noise muffs or helmets fit properly and are in good condition
- Avoid noise or limit time around noise to only critical tasks



Combat  
Arms  
Earplug

NSN 6515-  
01-466-  
2710



Authorized  
wear

IAW AR 670-1

If you have to raise your voice to be understood, it is too noisy.

Put on hearing protection.

# VISION CONSERVATION

- **Preventive Measures and Eye Protection**

- Contact lens use is prohibited for use in environments where exposure to smoke, toxic chemical vapors, sand, or dust occurs
- If required, maintain 2 pair of glasses and 1 protective mask insert
- Use eye protection when in any potentially eye hazardous environment
  - Safety goggles or spectacles with side shields\*
  - Chemical splash goggles\*

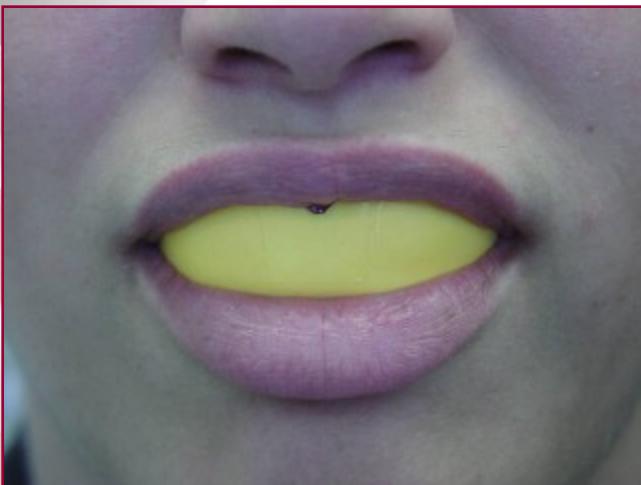


**Vision Ready is  
Mission Ready!**

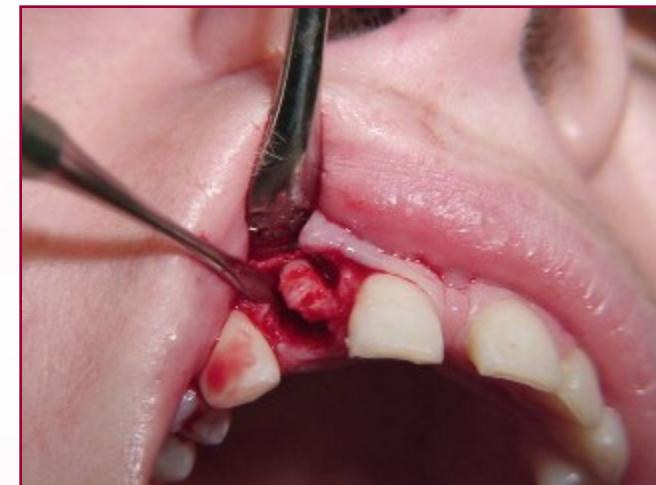
\*(ANSI Z87.1 approved)

# MOUTH GUARDS

Use Them



Lose Them



OR

# FOODBORNE AND WATERBORNE DISEASES

- Diarrhea
- Cholera
- Hepatitis A and E



- Typhoid Fever
- Chemicals/Pesticides
- Heavy Metal Poison



## COUNTERMEASURES

- Do not consume any food, ice, water, or beverage (to include bottled water) that have not been approved by the U.S. military
- Assume all non-approved food, ice, and water is contaminated

Even a one-time consumption of these foods or water may cause severe illness

# FOOD CONTAMINATION

- Metals
  - Arsenic
  - Chromium
  - Cadmium
  - Lead
- Pesticides
- Insecticides
- Fertilizers
- Industrial chemical runoff
- Hazardous waste dumping
- Untreated sewage
- Human waste
- Animal waste



# VECTOR-BORNE THREATS



**Sand Flies**



**Mosquitoes**



**Fleas**



**Ticks**



**Not to scale**



**Lice**



**Chigger Mites**

Your Medical Authority will provide guidance on the specific threat and countermeasures for your deployment location

# PERSONAL PROTECTIVE MEASURES



Permethrin  
On  
Uniform



DEET On  
Exposed  
Skin



Properly  
Worn  
Uniform

MAXIMUM  
PROTECTION



**DOD Insect Repellent System**

**YOU NEED TO KNOW...**

Dry cleaning removes permethrin from the uniform

# INSECT REPELLENTS FOR SKIN AND CLOTHING

## DEET lotion



NSN 6840-01-284-2002



- Apply a thin coat to EXPOSED skin
- One application lasts up to 12

## Permethrin

- Individual Dynamic Absorption Kit (IDA)
- Treatment lasts for over 50 launderings



NSN 6840-01-345-0237



NSN 6840-01-278-1336

- Aerosol spray can
- Treatment lasts through 5-6 washes

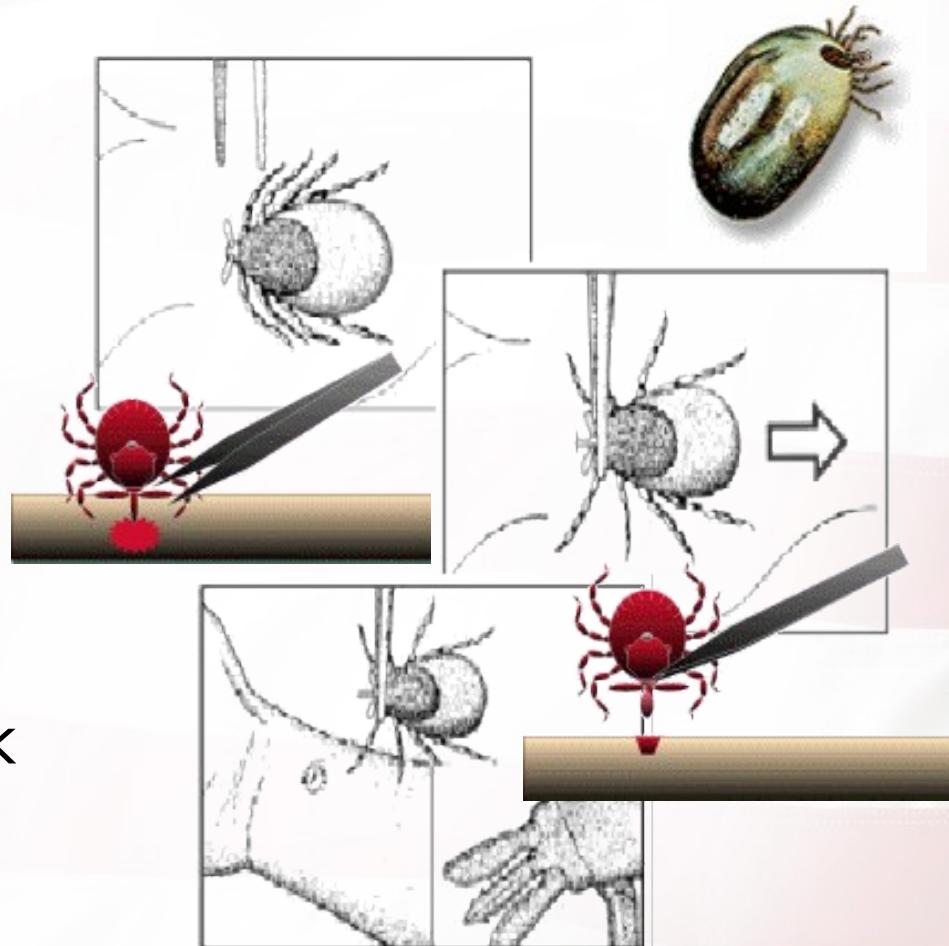
# OTHER INDIVIDUAL COUNTERMEASURES

- Wash and inspect your body for insects/ticks and bites daily
- Use buddy system to check clothing routinely
- Launder uniform routinely to remove insects and eggs
- Use a bed net while sleeping
  - Spray the outside of the net with permethrin
  - Tuck edges under cot or sleeping bag
  - Don't let net touch your skin while you sleep



# TICK REMOVAL PROCEDURES

- Use fine-tipped tweezers to grasp mouthparts
- Grasp mouthparts against skin surface
- Pull back slowly and steadily with firm tension
- Avoid squeezing tick
- Wash wound and apply an antiseptic



# HAZARDOUS ANIMALS

- Rabies: wild dogs, cats, and other animals
- Hantavirus: infected rodent feces and urine
- Ticks, fleas, mites: carried by rodents
- Rodents: contaminate food, damage equipment



## COUNTERMEASURES

- Do not feed, handle, or keep wild or stray animals as pets or mascots
- Do not tolerate the presence of rodents
- Maintain a high state of sanitation
- Avoid inhaling dust when cleaning unoccupied areas (avoid dry sweeping)
- Seek medical attention for animal bites or scratches



# VENOMOUS ANIMALS

- Snakes: Long-Nosed Viper, European Viper, Orsini's Viper
- Bees, wasps, hornets, and ants
- Spiders, centipedes, and scorpions

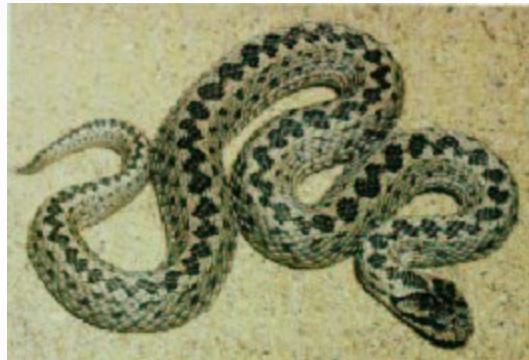


## COUNTERMEASURES

- Avoid bees, hornets, wasps, ants, and spiders
- Assume ALL snakes are poisonous
- Do not attempt to handle or capture any snakes
- Shake out clothes, shoes, and bedding before use
- Wear foot protection at all times (no barefoot)
- Bring proper medication if allergic to bites/stings



# POISONOUS SNAKES IN THE BALKAN THEATER



Orsini's Viper (*Vipera ursinii*)



European Viper (*Vipera berus*)



Long-Nosed Viper (*Vipera ammodytes*)

# HAZARDOUS PLANTS

- Plant resins cause contact dermatitis
- Poisonous roots, stems, leaves, and fruit
- Weeds and stinging nettles
- Thorny shrubs and trees



Stinging Nettles



Castor Bean



TOXIC PLANT RESINS  
AND DERMATITIS

## COUNTERMEASURES

- Avoid touching unfamiliar plants
- Use clothing as protective barrier
- Rinse skin promptly after exposure
- Wash clothing after contact
- Never eat any part of unfamiliar plant

# WATER CONTACT DISEASES

- Leptospirosis



## COUNTERMEASURES (Mission permitting)

- Avoid contact with standing water
- Towel dry vigorously after exposure
- Take all medications as directed

# ENVIRONMENTAL CONSIDERATIONS

- Consider environmental aspects of operations
- Properly manage hazardous material
- Properly dispose of hazardous and medical waste
- Prevent oil and fuel spills
- Clean vehicles at proper locations
- Respect cultural and historical property
- Protect natural resources and the terrain



# ENVIRONMENTAL CONSIDERATIONS

- Hazardous Materials
- Hazardous Waste
- Medical Waste
- Refueling Points
- Spill Response
- Wastewater Discharge
- Decon Sites
- Latrines
- Burn pits
- Laundry and Bath
- Fuel Storage
- POL Storage
- Generators
- Special Wastes
- Burial Sites



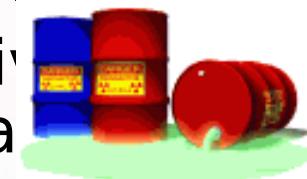
# ENVIRONMENTAL AIR POLLUTION

- Location of Air Pollution Sources
  - Burning or Damaged Buildings
  - Open Burning/Waste Disposal
  - Vehicle/Generator Exhaust
- Contaminants
  - Dust, Silica, Asbestos, Lead
  - Organic Vapors and Organic Gases
- Industrial Facilities



# TOXIC INDUSTRIAL CHEMICALS/MATERIALS

- OCONUS threat exists from accidental or **intentional** release of TICs/TIMs.
- CAUTION - There are many uncommon/unknown TIC/TIM sources in an OCONUS setting.
- Become familiar with individual response technique, such as shelter in place, and any emergency warning systems (if applicable). Make sure other unit members are also aware.
- Protective measures are chemical specific - rely on trained personnel for recommendations.
- There is no one size fits all protective measures - this includes MOPP gear.



# TOXIC INDUSTRIAL CHEMICALS / MATERIALS

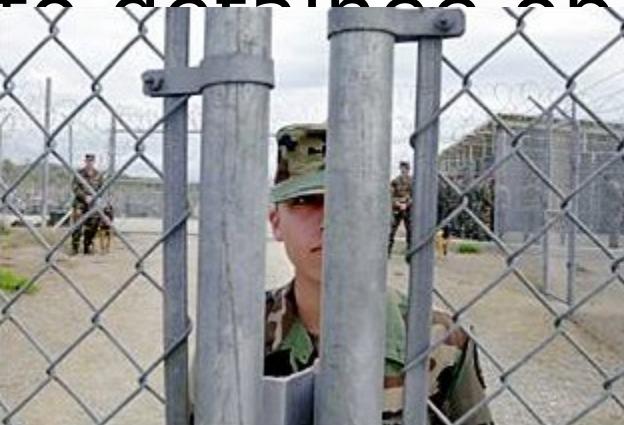
- Personnel deployed in support of missions ranging from war to operations other than war may be exposed to harmful chemicals as a result of industrial accidents, sabotage, or the intentional or unintentional actions of enemy or friendly forces.

**Example Catastrophic Toxicological or Physical Hazards for Industrial Sites, Balkan States**



# DETAINEE OPERATIONS

- These slides are for personnel deploying with the specified mission of providing direct support to detainee operations



**Camp X-Ray, GTMO**

**Afghanistan**

# DETAINEE OPERATIONS



- Security or other personnel in direct contact with detainees are at higher exposure risk for:
  - Bloodborne Pathogens (Hepatitis B and HIV)
  - Respiratory Diseases (Tuberculosis)
- Additional packing items for personnel deploying for the specified mission of detainee operations
  - N95 Respirator
  - Fluid proof gloves (Latex or equivalent, non-sterile)

# UNIVERSAL PRECAUTIONS

- **“Universal Precautions or Standard Precautions”** are the terms used to describe a prevention strategy in which all blood, potentially infectious materials, and respiratory secretions are treated as if they are, in fact, infectious, regardless of the perceived status of the source individual.
- In other words:  
**Whether or not you think the blood/body fluid is infected with bloodborne pathogens, you treat it as if it is infected.**

# BLOODBORNE PATHOGENS

- Bloodborne pathogens (BBPs) pose a risk to unprotected personnel when exposed to human blood and other potentially infectious materials:
  - Body fluids
  - Tissues
  - Blood-saturated, dripping, or blood-caked clothing or equipment.
- BBPs Include:
  - Hepatitis B, C, D virus
  - Human immunodeficiency virus (HIV)
  - 23 other infectious diseases

# PREVENTION OF BLOODBORNE INFECTION

- Personal Protective Equipment (PPE)
  - Gloves (Fluid-Proof)
  - Eyes and Face Protection
  - Body Protection
  - Head and Foot Protection



If you find yourself in a situation where you have to come in contact with blood or other body fluids and you don't have any standard personal protective equipment handy, you can improvise. Use a towel, plastic bag, or some other barrier to help avoid direct contact.

# BLOODBORNE INFECTION

## PPE

- Rules to follow:
  - Always wear personal protective equipment in exposure situations
  - Remove PPE that is torn or punctured, or has lost its ability to function as a barrier to bloodborne pathogens
  - Replace PPE that is torn or punctured
  - Remove PPE before leaving the work area



**To protect yourself, it is essential to have a barrier between you and the potentially infectious material**

# BLOODBORNE INFECTION HYGIENE PRACTICES

- Hands or other exposed skin should be thoroughly washed as soon as possible following an exposure incident
- Hands should also be washed immediately (or as soon as feasible) after removal of gloves or other PPE
- If you are working in an area without an approved water source, you may use an antiseptic cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes



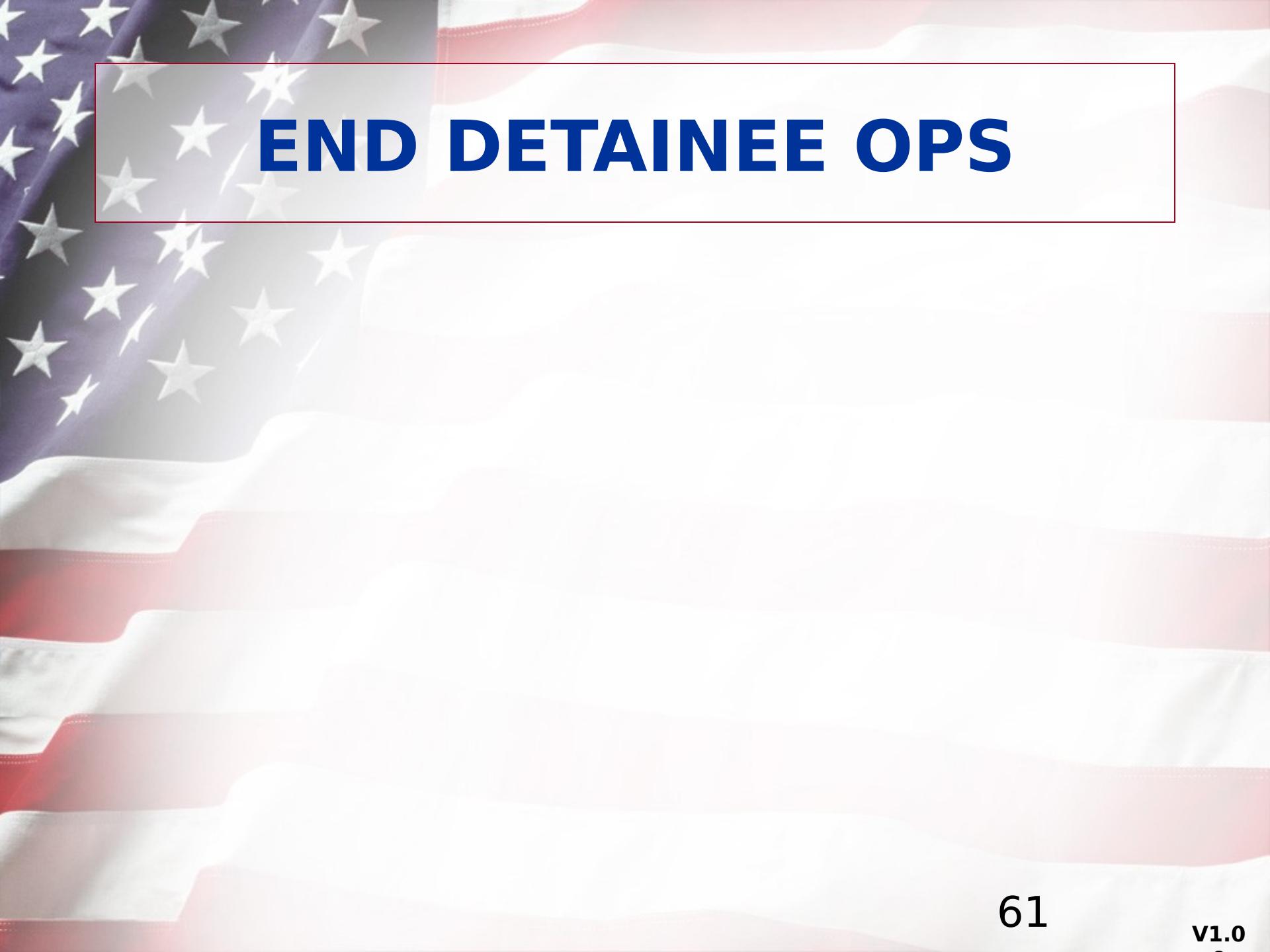
# **TUBERCULOSIS (DETAINEE TRANSPORTATION)**

- Many of the detainees you are transporting may have active tuberculosis (TB)
- TB transmission may occur during transport flights

## **COUNTERMEASURES**

- Wear N95 respirator
- Wear your gloves for BBPs
- Receive Universal Precautions training prior to flight
- Reduce proximity and duration of exposure to detainees (mission first)
- TB test 30-days after completion of your last transport mission



A large, semi-transparent American flag serves as the background for the slide. The stars are in the upper left corner, and the red and white stripes are visible across the bottom.

# END DETAINEE OPS

# OCCUPATIONAL HEALTH PRE-DEPLOYMENT

- Current Industrial Hygiene review of operations
- Engineering controls
- Supply of required Personal Protective Equipment (PPE)
- Hazard Communication (HAZCOM) training
- Personal Protective Equipment training
- Current medical surveillance



# OCCUPATIONAL HEALTH DEPLOYMENT

- Occupational Health Hazards
- Use your applicable control strategies
  - Elimination or substitution
  - Engineering control
  - Work Practices and administrative controls
  - Personal Protective Equipment
- Follow the PPE program requirements



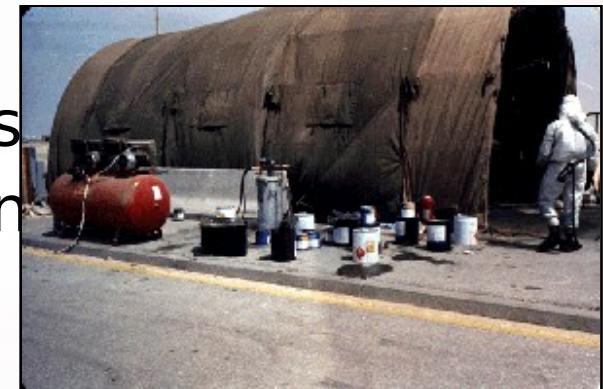
# FIELD FACILITIES CONTROL OF HAZARDOUS EXPOSURES

- Garrison facilities include engineering controls to control chemical exposures
- In the field, additional efforts are needed to provide the same level of control for these occupational exposures
- Install and use safety countermeasures



# OCCUPATIONAL HAZARDS

- Exhaust from engines and fuel space heaters
- Gases from weapons firing
- Solvents used to clean weapons
- Chemicals and metals from painting vehicles and equipment
- Greases and oil from vehicle maintenance repair
- Detergents used to clean equipment
- Fuels and refueling operations
- Weapon systems: radiation energy, shock, vibration, noise



# DEPLETED URANIUM (DU)

- Depleted uranium (DU) is used in armor-piercing munitions and in enhanced tank armor protection
- DU is a heavy metal that is slightly radioactive. Can cause adverse health effects if it enters your body (inhaled, ingested, fragments).



## COUNTERMEASURES

- Receive Depleted Uranium Awareness Training
- Assume a DU contamination zone of 50 meters around actively burning fires involving any armored combat vehicles
- As with all battlefield debris-do not touch or move the object
- Notify authorities of the location of any debris
- Exercise standard field hygiene, to include washing hands and face
- No additional protective measures are required for handling unfired DU munitions other than those required for all munitions

# HAZARD ASSESSMENT TOP THREE

## #1 Vehicle Accidents

Congested roads,  
speeding and fog.  
Civilian vehicles on  
roads increases risks.



Slips, trips, and falls.  
Surfaces create  
hazards.  
Injuries to hands,  
forearms,  
and shins.

## #3 Fires

Improper re-fueling and  
unattended fuel heaters  
increase the risk of fire  
in tents.

## #2 Personal Injuries

# INJURY PREVENTION

- Slips, Trips, and Falls
- Sharp/Hot Objects
- Falling Objects
- Electrical Safety
- Back Safety
- Vehicle Safety



# MOTOR VEHICLE ACCIDENTS

- Motor vehicle accidents
  - Driver Qualifications
  - Maintenance
  - Ground Guides
- Special Precautions
  - Night/Night Vision Device Operations
  - Convoy Operations
  - Refueling Operations
  - Sand/Dust Storms and Fog



The most common cause of serious non-battle injuries and death. All personnel have a duty to intervene in the careless operation of a vehicle.

# SPORTS/TRAINING INJURIES

- Unit training program
  - Physical Training (PT)
  - Military Training
- Sporting activities
  - Avoid “tackle” sports
  - Wear safety equipment (eye and mouth protection) during recreational activities



Sports activities can result in injuries - some minor, some serious, and still others resulting in lifelong medical problems

# UNEXPLODED ORDNANCE

- No souvenirs
- Do not touch
- Can explode at any time



# AIRBASE CONTAMINATION

- Soil and ground water contamination as a result of poor storage management, accidental releases, and improper waste disposal techniques
  - Kerosene, diesel fuel, gasoline, heating oil, lubricants, organic solvents, PCBs, heavy propellants, and de-icing comp
- Volatile organic compounds evaporating from soil and ground water may accumulate in the airspace inside of tents or buildings constructed over contaminated areas



# AIRBASE CONTAMINATION

- Personnel exposed to these contaminants may experience adverse health effects



## COUNTERMEASURES

- Consult with preventive medicine personnel prior to engaging in soil excavation or other activities that involve direct contact with soil or ground water (example: construction of defensive positions)
- Do not work or bivouac over contaminated areas or in potentially contaminated buildings
- Exercise standard field hygiene (wash after contact)
- Seek medical care if you experience: eye, nose, and throat irritation; headaches, dizziness, weakness, loss of coordination, confusion, blurred vision, or nausea

# POST DEPLOYMENT

- Complete Post-Deployment Medical Health Assessment (DD FORM 2796)
- Receive post-deployment preventive medicine briefing
- Receive post-deployment screening, testing, and follow-up



# POST DEPLOYMENT

- Continue to seek counseling from Chaplain or medical personnel
- Homecoming Stress
  - Don't expect things to be exactly the same, especially if long deployment
  - Ease back into roles; don't rush it
  - Children may be withdrawn
  - Spouse may be moody or depressed
  - Financial and property issues may require immediate attention

**HOME**

# DISEASE SLIDES

- Anthrax – Natural
- Boutonneuse Fever
- Bovine Spongiform Encephalopathy (BSE)
- Brucellosis
- California Group Viruses
- Crimean-Congo Hemorrhagic Fever
- Hantavirus Hemorrhagic Fever with Renal Syndrome (HFRS)
- Hepatitis A
- Leptospirosis



- Lyme Disease
- Meningococcal Meningitis
- Q-Fever
- Rabies
- Sandfly Fever
- Tick-borne Encephalitis
- Tuberculosis
- Tularemia
- Typhoid/Paratyphoid
- Typhus – Endemic (Murine)

# **ANTHRAX**

## **(Natural Disease)**

# BOUTONNEUSE FEVER (Mediterranean Spotted Fever)

- Caused by rickettsia obtained from tick bites
  - Increased risk June-October
- Symptoms
  - High fever, severe headache, and muscle, joint, or back pain
  - Generalized rash involving palms and soles
  - Small, dark-centered ulcer at site of tick bite
- Countermeasures  Prevent tick bites
  - Use the DOD Insect Repellent System
  - Sleep under a permethrin-treated bed net
  - Regular examination of clothing and skin for ticks; promptly remove attached ticks



# BSE (Mad Cow Disease)

## (variant Creutzfeldt-Jakob Disease in Humans)

- Caused by prion (modified form of normal cell protein) obtained from ingestion of contaminated meat products
- Symptoms
  - Confusion, progressive dementia, involuntary muscle jerks
  - Death within 3 to 12 months
- Countermeasures
  - Avoid and beef products from US
  - Select beef or beef products such as pieces of muscle meat (avoid brain, bone marrow, etc.) that have a reduced opportunity for contamination
  - Consume only food approved by the US military



# BRUCELLOSIS

- Caused by bacteria obtained from meat and dairy products or handling livestock
- Symptoms
  - Fever, headache, muscle aches, arthritis, swollen testicles, chronic fatigue-like syndrome, and depressive episodes
- Countermeasures  Avoid animal contact
  - Consume only food/drink approved by the US military
  - Bivouac away from livestock and wildlife

# CRIMEAN-CONGO HEMORRHAGIC FEVER

- Caused by virus obtained from tick bites
  - Also contact with livestock or their carcasses
- Symptoms
  - Sudden onset of fever, muscle aches, dizziness, neck pain and stiffness, backache, headache, sore eyes and photophobia (sensitivity to light)
  - Severe symptoms and death possible
- Countermeasures      Prevent tick bites
  - Use the DOD Insect Repellent System
  - Sleep under a permethrin treated bed net
  - Regular examination of clothing and skin for ticks; promptly remove attached ticks



# HANTAVIRUS HEMORRHAGIC FEVER WITH RENAL SYNDROME (HFRS)

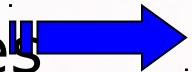
- Caused by virus obtained from aerosol transmission of rodent excreta (urine, feces, saliva)
- Symptoms
  - High fever, headache, abdominal or lower back pain, hemorrhagic manifestations and renal involvement
  - 5-15% fatality
- Countermeasures
  - Avoid contact with rodent excreta
  - Exclude rodents from living areas
  - Store food under rodent-proof conditions
  - Disinfect rodent contaminated areas (see Preventive Medicine for guidance)



# HEPATITIS A



# LEPTOSPIROSIS

- Caused by bacteria obtained from animal urine
  - Highest threat is skin contact with contaminated lakes, rivers, streams, or other water sources
  - Can acquire from food contaminated with rodent urine
- Symptoms
  - Fever, headache, muscle aches, vomit jaundice, anemia, and sometimes rash
  - Severe symptoms and death possible
- Countermeasures  Avoid water contact
  - Avoid swimming and wading in lakes, rivers, and streams (mission permitting)



# LYME DISEASE

- Caused by bacteria obtained from tick bites
  - Bacteria maintained in small rodents
- Symptoms
  - Red, slowly expanding "bull's-eye" rash, accompanied by general tiredness, fever, headache, stiff neck, muscle aches, and joint pain
  - More severe symptoms possible
- Countermeasures  Prevent tick bites
  - Use the DOD Insect Repellent System
  - Sleep under a permethrin-treated bed net
  - Regular examination of clothing and skin for ticks; promptly remove attached ticks



# MENINGOCOCCAL MENINGITIS

- Caused by bacteria obtained from infected persons during coughing
  - Increased risk during cooler or dry months (winter and spring)
- Symptoms
  - Sudden onset of fever, intense headache, nausea, vomiting, stiff neck, and frequently rash
  - Severe symptoms and death possible
- Countermeasures  Immunization
  - Avoid unnecessary exposure to high-risk populations

# Q FEVER

- Caused by rickettsia obtained from inhalation of contaminated dust
  - Direct contact with infected animals, usually livestock
  - Contact with contaminated animal products – milk
- Symptoms
  - Sudden onset of high fever, severe headache, muscle aches, sore throat, cough, nausea, vomiting, diarrhea, and abdominal and chest pain
- Countermeasures  Avoid animal contact
  - Bivouac away from livestock and/or previously inhabited livestock areas
  - Drink only milk approved by the U.S. military



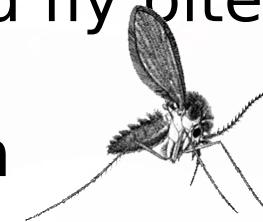
# RABIES

- Caused by virus obtained from contact with saliva of infected animal
  - Infected animal can be any warm-blooded animal
- Symptoms
  - Fever, headache, tingling and discomfort at bite site
  - Anxiety, confusion, agitation, delirium, abnormal behavior, hallucinations, and insomnia
  - Rabies is 100% fatal once symptoms develop
- Countermeasures
  - Post-exposure treatment  is available. Must be administered immediately after exposure.



# SANDFLY FEVER

- Caused by virus obtained from sand fly bites
  - Increased risk April-November
  - Increased risk from dusk to dawn
- Symptoms
  - Fever, frontal headache, muscle aches, and eye pain
  - Severe cases can have neck rigidity, confusion, and inflammation of the brain
- Countermeasures  Prevent sand fly bites
  - Use the DOD Insect Repellent System
  - Sleep under a permethrin-treated bed net



Sand flies may be hard to see as they are very small - only about one-third the size of typical mosquitoes

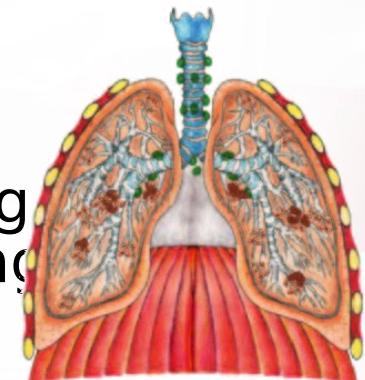
# TICK-BORNE ENCEPHALITIS

- Caused by virus obtained from tick bites or unpasteurized dairy products
  - Increased risk March-November
- Symptoms
  - Fever - followed by a 4-10 day recovery - followed by fever and severe brain inflammation
- Countermeasures  Prevent tick bites
  - Use the DOD Insect Repellent System
  - Sleep under a permethrin-treated bed net
  - Regular examination of clothing and skin for ticks; promptly remove attached ticks
  - Drink only milk approved by the U.S. military

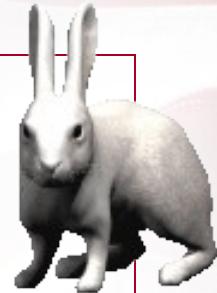


# TUBERCULOSIS

- Caused by bacteria obtained from infected persons
  - Infected persons release bacteria during coughing, sneezing, speaking, or spitting
- Symptoms
  - Cough possibly with blood or sputum, chest pain, weight loss, night sweats, fever, and weakness
  - Severe symptoms and death possible
- Countermeasures :  Avoid unnecessary exposure to high-risk populations and buildings
  - Use N95 respiratory protection when directed

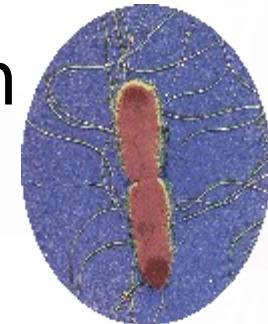


# TULAREMIA



# TYPHOID - PARATYPHOID FEVERS

- Caused by bacteria obtained from contaminated food and water
- Symptoms
  - Fever, severe headache, constipation, enlarged spleen, and rose spots on the trunk
  - Severe symptoms and death possible
  - Paratyphoid fever is milder
- Countermeasures  Vaccination
  - Consume only food, water, and ice approved by the U.S. military



# ENDEMIC TYPHUS (Murine Typhus)

- Caused by rickettsia obtained from rodent fleas
  - Increased risk during summer
  - Increased risk in rodent-infested buildings near harbor or river areas
- Symptoms
  - Fever, headache, and/or rash for 1-7 days
- Countermeasures  Prevent flea bites
  - Use the DOD Insect Repellent System
  - Avoidance of rodent populations
  - Prompt removal of fleas from clothing and skin



# VIRAL HEMORRHAGIC CONJUNCTIVITIS

- Caused by virus obtained by direct or indirect contact with discharges from infected persons
- Symptoms
  - Rapid eyelid swelling, congestion, pain and increased tearing with bleeding into tissues
  - Severe symptoms
- Countermeasures
  - Strict personal hygiene
  - Avoid unnecessary exposure to high-risk populations



# **MEDICAL THREAT COUNTRY SPECIFIC**



# COUNTRY PROFILES

- Bosnia-Herzegovina
- Kosovo (Province of Serbia)

# OVERVIEW

- For each country
  - Background
  - Environmental issues
  - Diseases of operational importance  
(in descending order)
- Primary information resources:
  - Central Intelligence Agency
    - The World Factbook 2002
  - US Department of State
    - Travel Warnings & Consular Information Sheets
  - CDC Blue Sheet



# BOSNIA-HERZEGOVINA



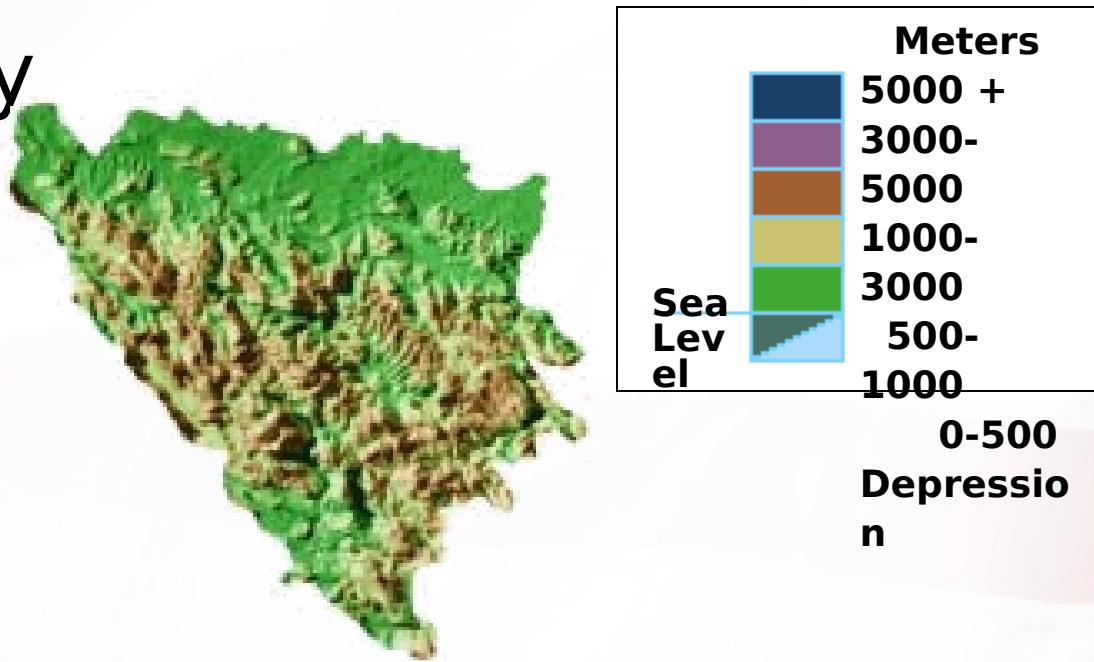
- The Dayton Agreement retained Bosnia and Herzegovina's international boundaries and created a Democratic government
- SFOR=Deter Renewed Hostilities



# Bosnia-Herzegovina: Environmental Issues

- Topography
- Climate

**hot summers and cold winters; areas of high elevation have short, cool summers and long, severe winters; mild, rainy winters along coast**



**Terrain: mountains and valleys**  
***lowest point: Adriatic Sea 0 m***  
***highest point: Maglić 2,386 m***

# Bosnia-Herzegovina: Environmental Issues

- Air
  - Emissions from industrial sources, energy production, traffic, agriculture, and heating
  - Air pollution most pronounced during winter months (climatic inversions)
  - Primary contaminants of concern are sulfur dioxide and particulate matter

# Bosnia-Herzegovina: Environmental Issues

- Food
  - Ochratoxin-in locally grown crops, a natural contaminant of moldy food, may contribute to kidney disease
  - Other contamination may occur from industrial activities or fertilizers
- Soil
  - Industries release untreated waste into environment, including heavy metals and pesticides
  - Localized to areas near industrial sites

# Bosnia-Herzegovina: Environmental Issues

- Water
  - Raw sewage and industrial wastes
  - Agricultural run-off
  - Effluent discharges are not controlled
  - Wastewater treatment plants non-functional

# Bosnia-Herzegovina: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage or runoff containing fecal pathogens and industrial waste
- Greatest long-term health risks
  - Localized air pollution in urban and industrial areas

# Bosnia-Herzegovina: Diseases of Operational Importance

- Intermediate risk country
- Diseases of greatest risk
  - Food and Waterborne: bacterial diarrhea, Hepatitis A
  - Soil Contact: Hantavirus hemorrhagic fever with renal syndrome (HFRS)

# Bosnia-Herzegovina: Diseases of Operational Importance

- Diseases of potential risk
  - Food and Waterborne: protozoal diarrhea, Brucellosis, Tularemia, Typhoid/Paratyphoid Fever
  - Vector-borne: Typhus (Murine), Boutonneuse Fever, Crimean-Congo Hemorrhagic Fever, Lyme Disease, Tick-borne Encephalitis
  - Water-borne: Leptospirosis
  - Animal Contact: Q Fever, Rabies
  - Sexually transmitted: Gonorrhea/chlamydia

# KOSOVO

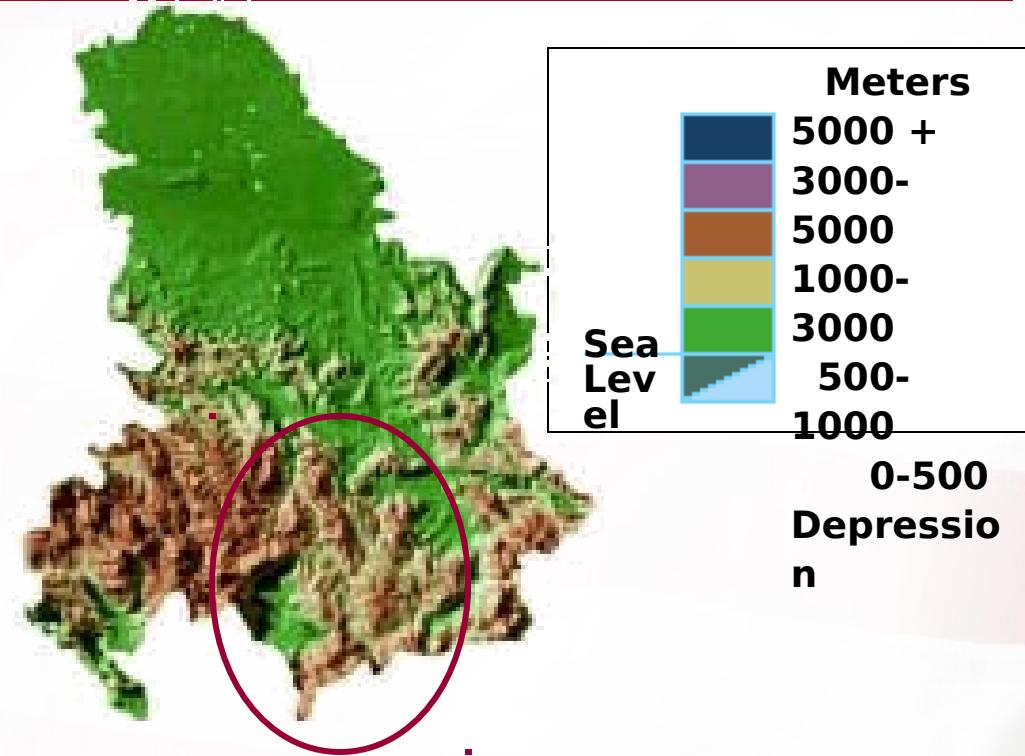
- Early 1990s, Yugoslavia began to unravel along ethnic lines
- Kosovo is autonomous province with own government, still part of Serbia (FRY)



# Kosovo: Environmental Issues

- Topography
- Climate

hot, dry summers and autumns and relatively cold winters with heavy snowfall



**Terrain: ancient mountains and hills**  
***highest point: Daravica (Djaravica)***  
***2656 m***

# Kosovo: Environmental Issues

- Air
  - High industrial emissions of sulfur dioxide and particulate matter
  - Plants lack air pollution control mechanisms
- Food
  - Ochratoxin-in locally grown crops, a natural contaminant of moldy food, may contribute to kidney disease
  - Chemical contamination from industries, pesticide and fertilizer misuse, and fecal contamination are all possibilities

# Kosovo: Environmental Issues

- Soil
  - Contamination localized to areas around industrial sites and waste disposal sites
  - Pesticides, petroleum products, and heavy metals



- Water
  - Contaminated by industrial effluents, nitrates and other chemicals
  - Rivers contaminated with waste runoff, heavy metals and unknown organic compounds

# Kosovo: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage or runoff containing fecal pathogens, and water contaminated with industrial waste
- Greatest long-term health risks
  - Localized air pollution in urban and industrial areas

# Kosovo: Diseases of Operational Importance

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# Kosovo: Diseases of Operational Importance

- Diseases of potential risk
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  - Water-borne: Leptospirosis
  - Animal Contact: Q Fever, Rabies
  - Sexually transmitted: Gonorrhea/chlamydia



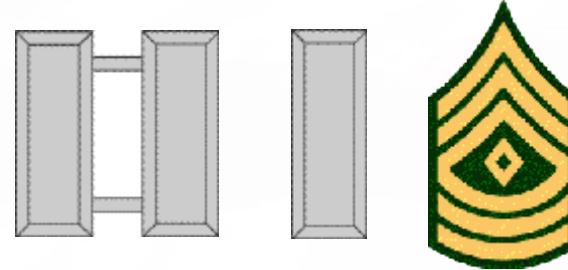
**LEADER**

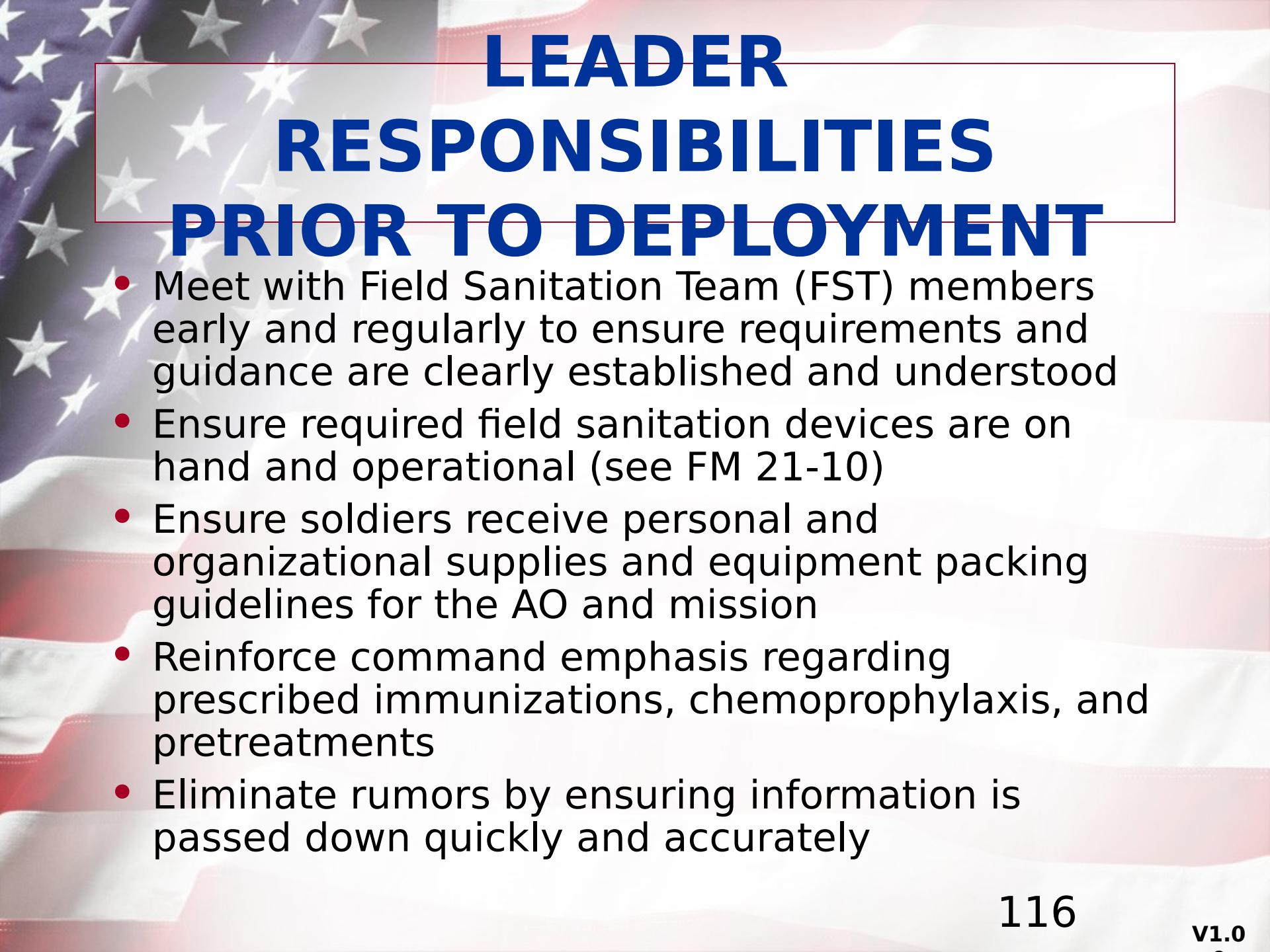
**RESPONSIBILITIES**

- USE THESE ADDITIONAL SLIDES WHEN BRIEFING UNIT LEADERS
- HIDE THESE SLIDES IF NOT USED

# LEADER RESPONSIBILITIES

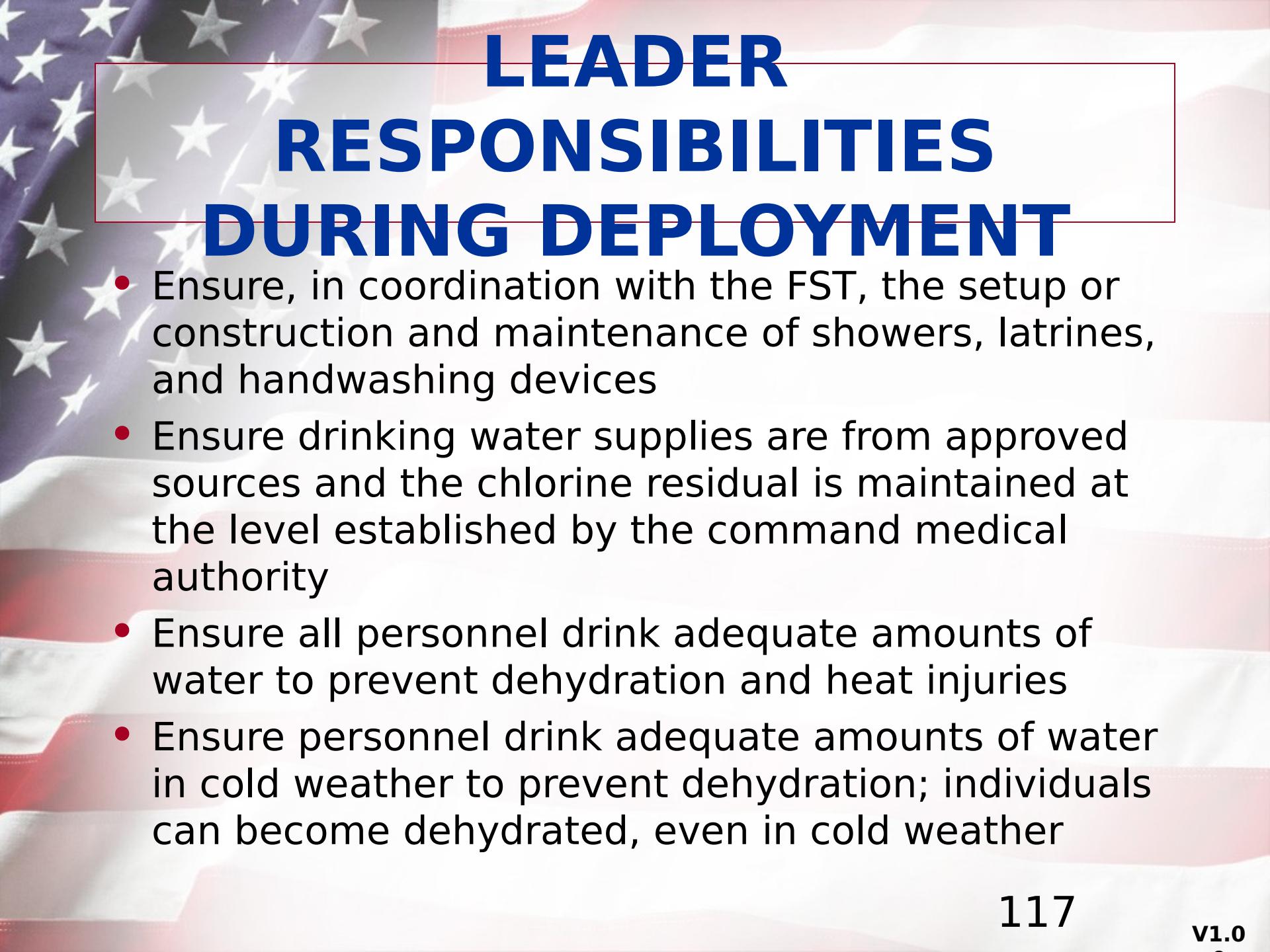
- Company Level Unit Leaders:
  - Commander
  - Executive Officer
  - First Sergeant
- Reduce the threat of Disease and Nonbattle Injury (DNBI) by staying informed of the medical threat
- Motivate, train, and equip subordinates prior to and during deployment to defeat the medical threat
- Work closely with Preventive Medicine personnel and emphasize the use of Preventive Medicine Measures (PMM) within your unit





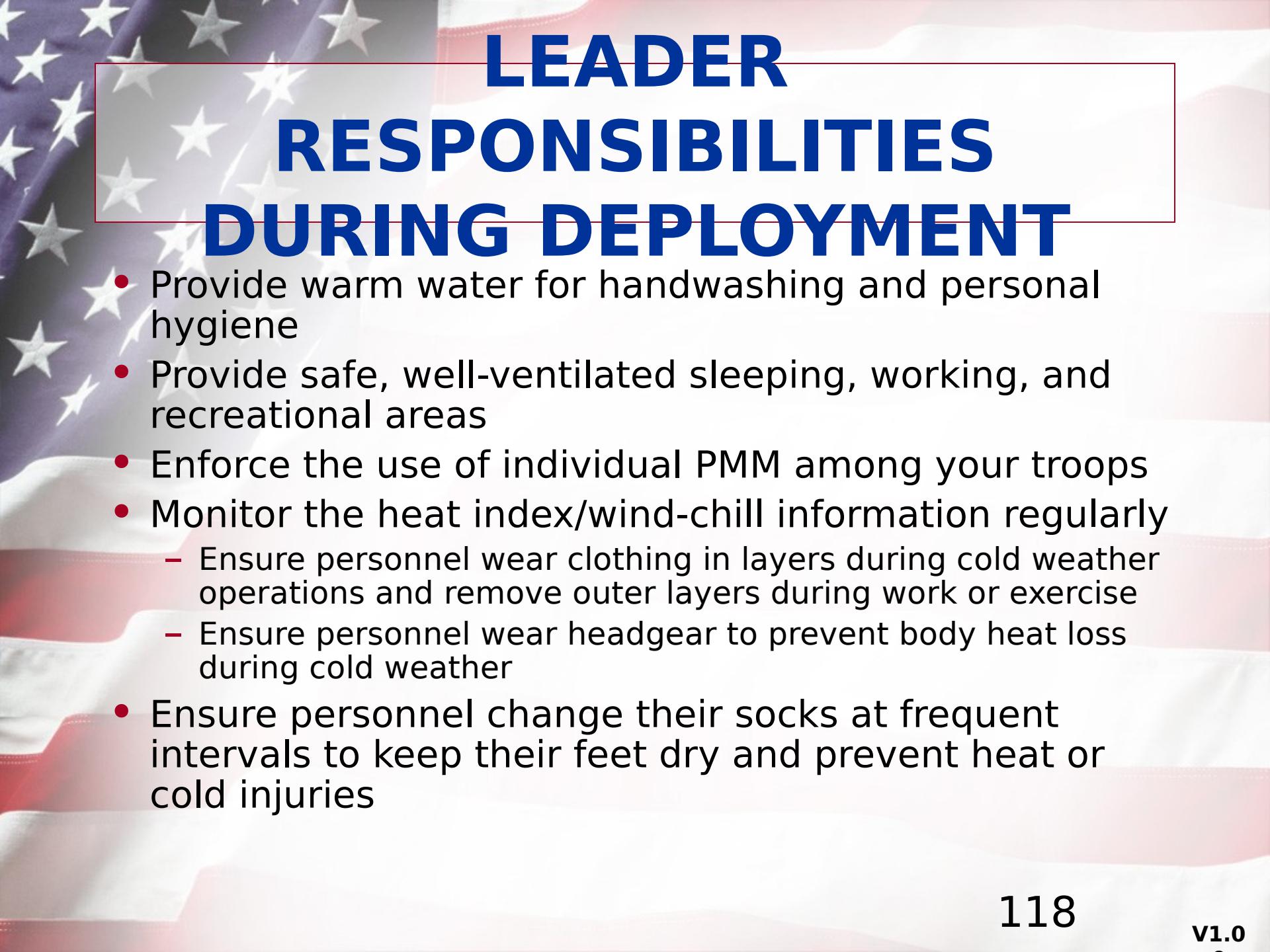
# **LEADER RESPONSIBILITIES PRIOR TO DEPLOYMENT**

- Meet with Field Sanitation Team (FST) members early and regularly to ensure requirements and guidance are clearly established and understood
- Ensure required field sanitation devices are on hand and operational (see FM 21-10)
- Ensure soldiers receive personal and organizational supplies and equipment packing guidelines for the AO and mission
- Reinforce command emphasis regarding prescribed immunizations, chemoprophylaxis, and pretreatments
- Eliminate rumors by ensuring information is passed down quickly and accurately



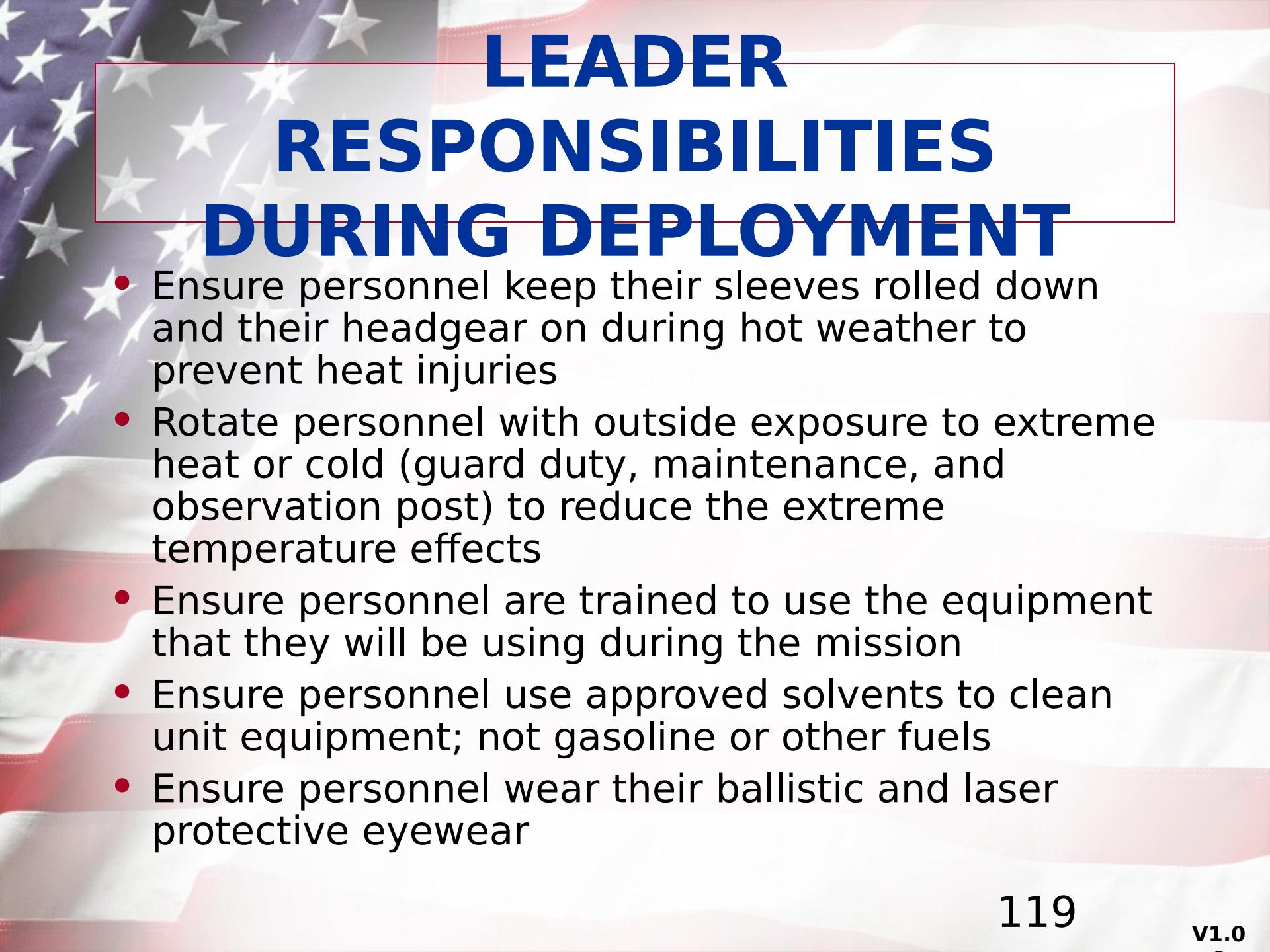
# **LEADER RESPONSIBILITIES DURING DEPLOYMENT**

- Ensure, in coordination with the FST, the setup or construction and maintenance of showers, latrines, and handwashing devices
- Ensure drinking water supplies are from approved sources and the chlorine residual is maintained at the level established by the command medical authority
- Ensure all personnel drink adequate amounts of water to prevent dehydration and heat injuries
- Ensure personnel drink adequate amounts of water in cold weather to prevent dehydration; individuals can become dehydrated, even in cold weather



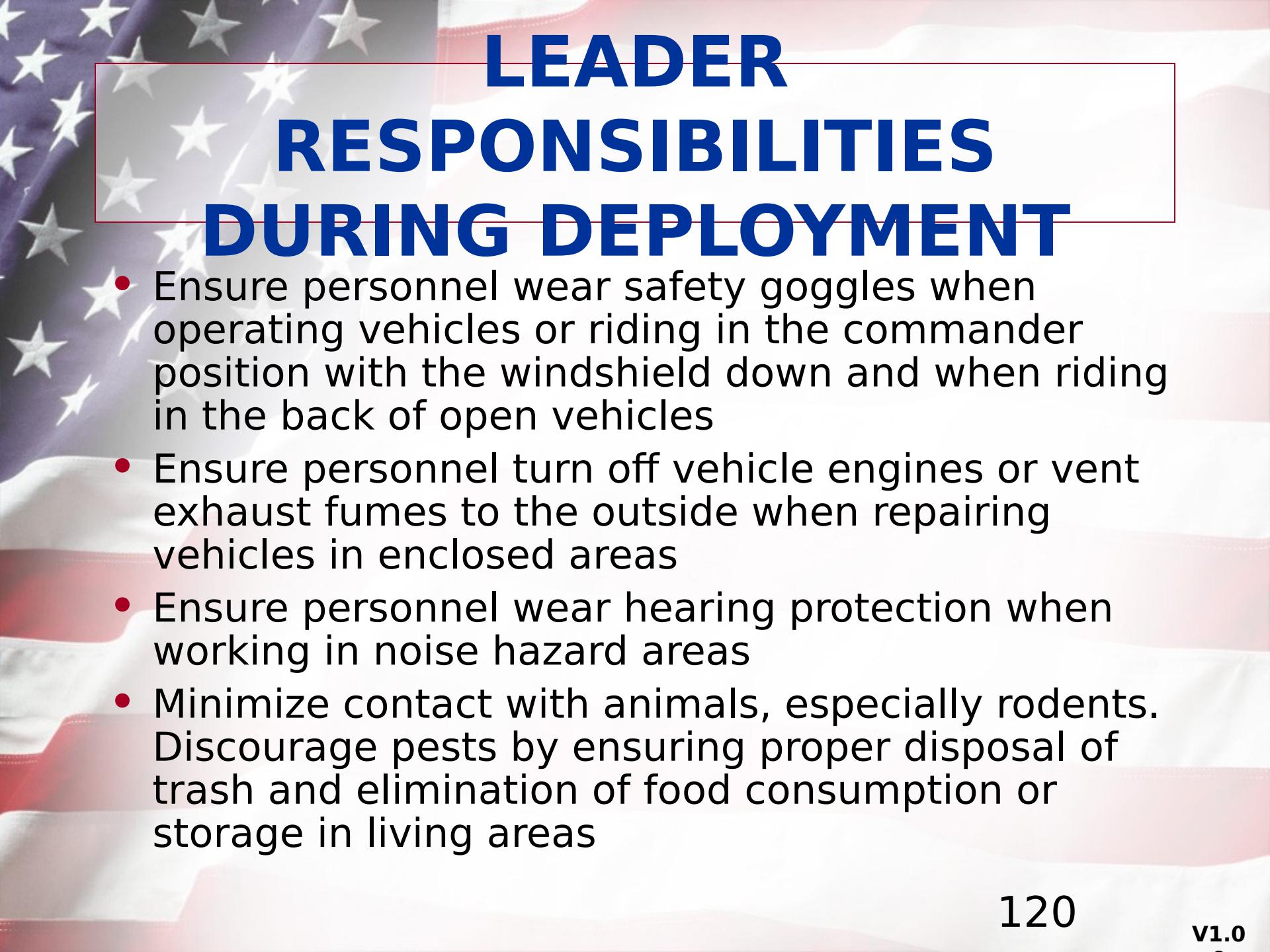
# **LEADER RESPONSIBILITIES DURING DEPLOYMENT**

- Provide warm water for handwashing and personal hygiene
- Provide safe, well-ventilated sleeping, working, and recreational areas
- Enforce the use of individual PMM among your troops
- Monitor the heat index/wind-chill information regularly
  - Ensure personnel wear clothing in layers during cold weather operations and remove outer layers during work or exercise
  - Ensure personnel wear headgear to prevent body heat loss during cold weather
- Ensure personnel change their socks at frequent intervals to keep their feet dry and prevent heat or cold injuries



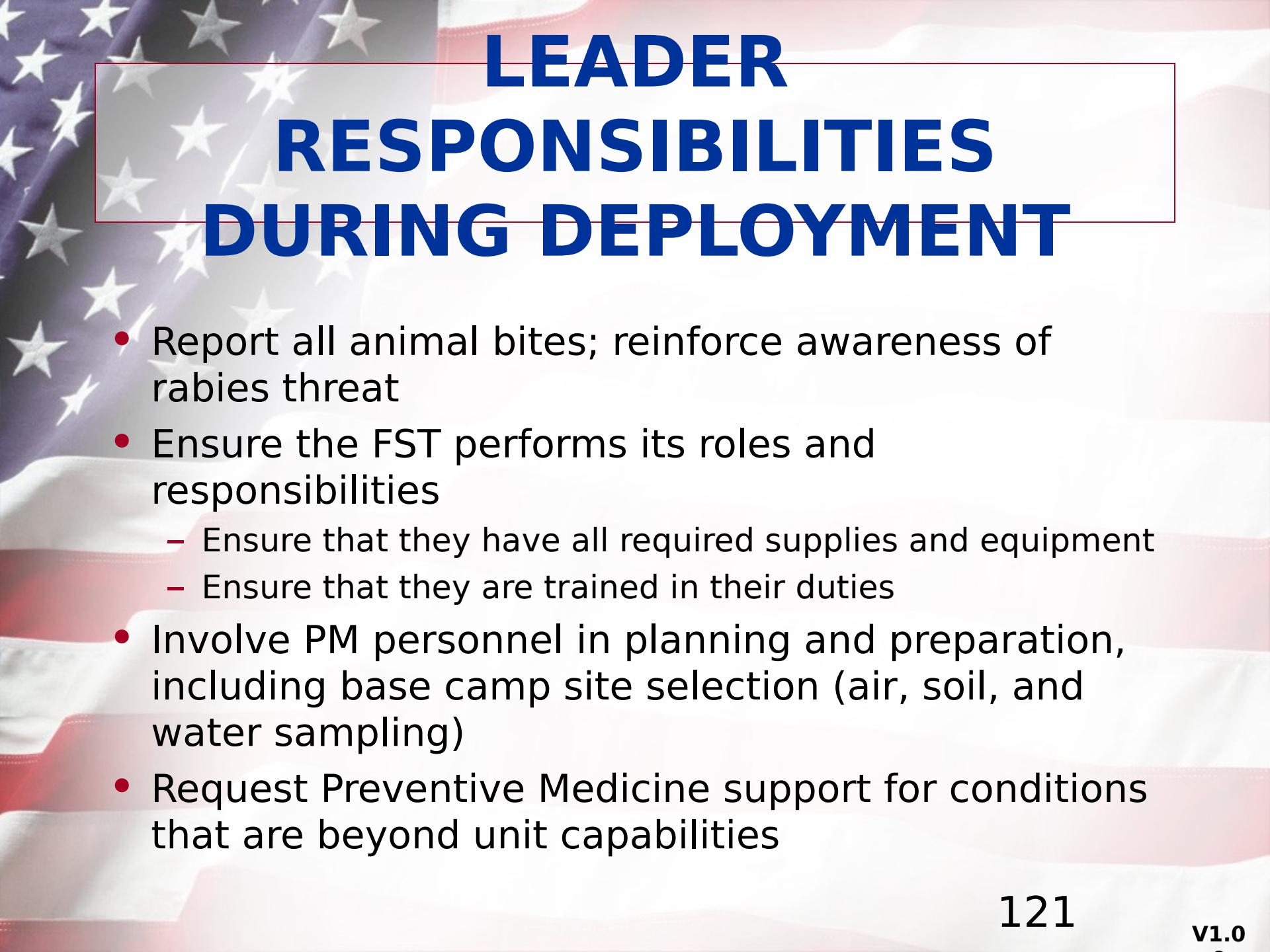
# **LEADER RESPONSIBILITIES DURING DEPLOYMENT**

- Ensure personnel keep their sleeves rolled down and their headgear on during hot weather to prevent heat injuries
- Rotate personnel with outside exposure to extreme heat or cold (guard duty, maintenance, and observation post) to reduce the extreme temperature effects
- Ensure personnel are trained to use the equipment that they will be using during the mission
- Ensure personnel use approved solvents to clean unit equipment; not gasoline or other fuels
- Ensure personnel wear their ballistic and laser protective eyewear



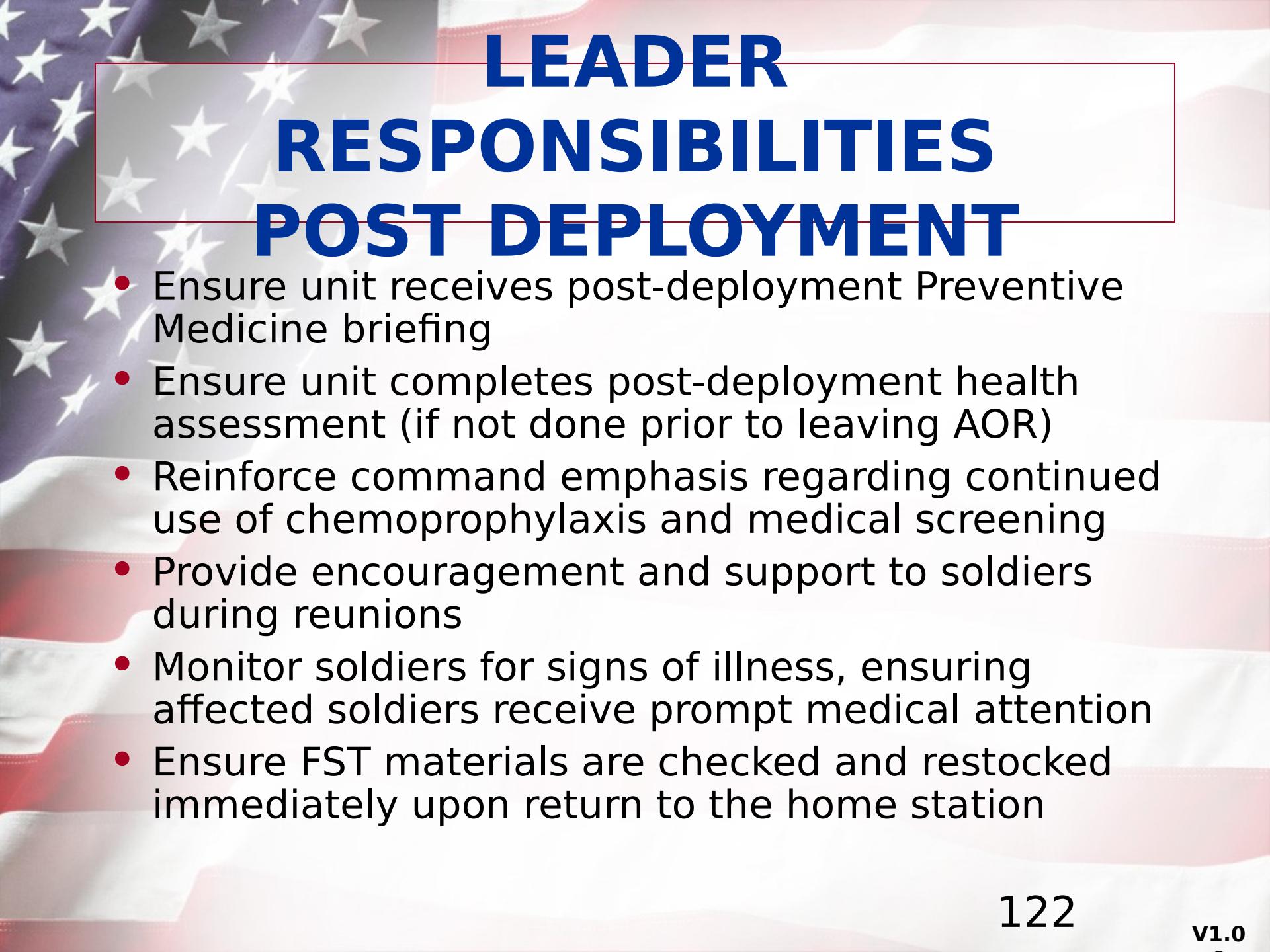
# **LEADER RESPONSIBILITIES DURING DEPLOYMENT**

- Ensure personnel wear safety goggles when operating vehicles or riding in the commander position with the windshield down and when riding in the back of open vehicles
- Ensure personnel turn off vehicle engines or vent exhaust fumes to the outside when repairing vehicles in enclosed areas
- Ensure personnel wear hearing protection when working in noise hazard areas
- Minimize contact with animals, especially rodents. Discourage pests by ensuring proper disposal of trash and elimination of food consumption or storage in living areas



# LEADER RESPONSIBILITIES DURING DEPLOYMENT

- Report all animal bites; reinforce awareness of rabies threat
- Ensure the FST performs its roles and responsibilities
  - Ensure that they have all required supplies and equipment
  - Ensure that they are trained in their duties
- Involve PM personnel in planning and preparation, including base camp site selection (air, soil, and water sampling)
- Request Preventive Medicine support for conditions that are beyond unit capabilities



# **LEADER RESPONSIBILITIES POST DEPLOYMENT**

- Ensure unit receives post-deployment Preventive Medicine briefing
- Ensure unit completes post-deployment health assessment (if not done prior to leaving AOR)
- Reinforce command emphasis regarding continued use of chemoprophylaxis and medical screening
- Provide encouragement and support to soldiers during reunions
- Monitor soldiers for signs of illness, ensuring affected soldiers receive prompt medical attention
- Ensure FST materials are checked and restocked immediately upon return to the home station

HIDDEN SLIDE

**END**

# **LEADER RESPONSIBILITIES**

HIDDEN SLIDE

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# Discussion

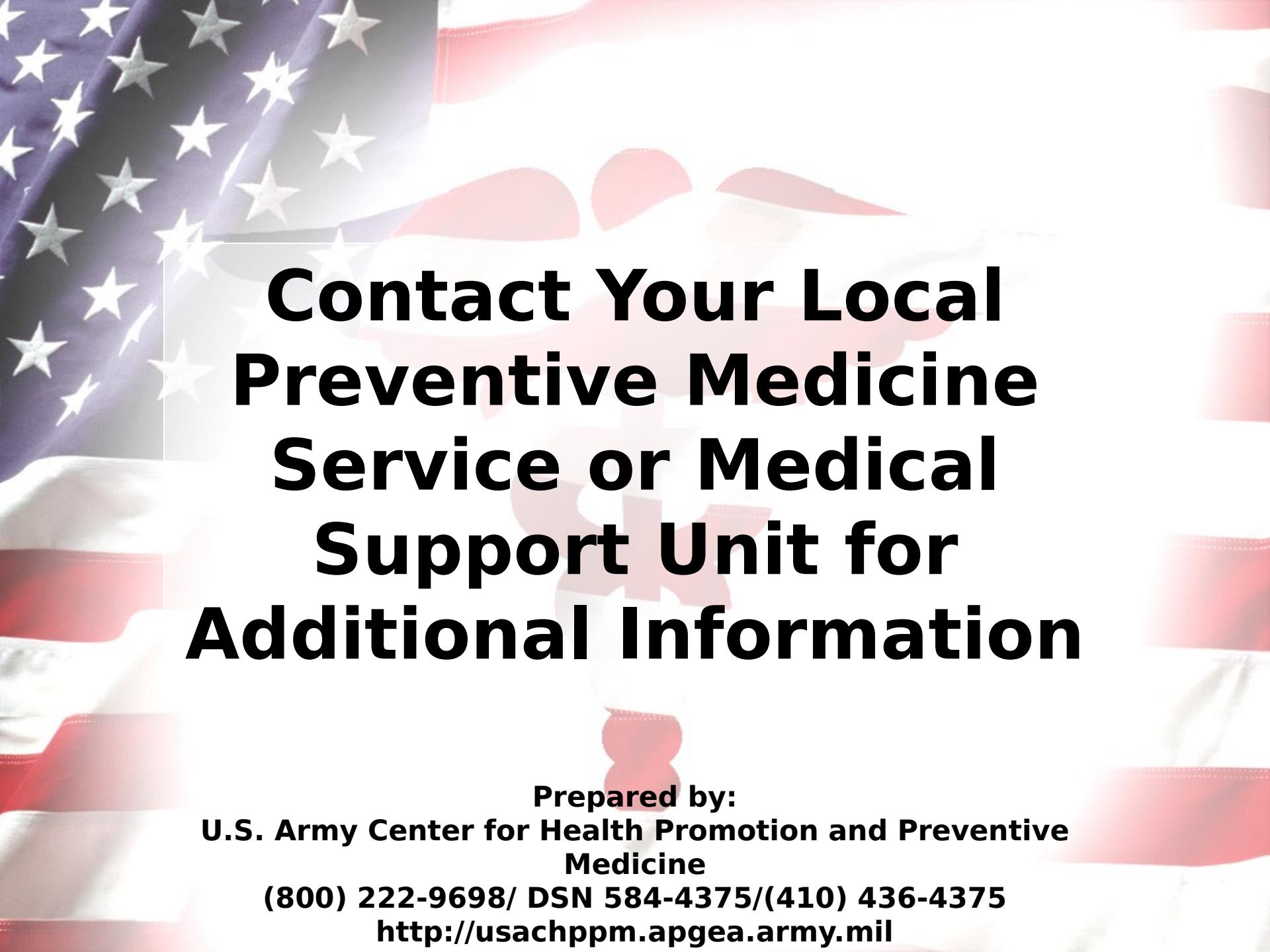


# SUMMARY

- Review of *Guide to Staying Healthy*
- Preparation for Deployment
- Deployment
- Medical Threat
- Post Deployment
- Country Profiles
- Leader Responsibilities

# CONCLUSION

- It is critical to all military missions that personnel (including combat, support, and sustaining base military and civilian forces) are aware of health threats and the countermeasures discussed in this briefing and the *Guide to Staying Healthy*. This information can be applied during all phases of military operations, including training, pre-deployment, deployment, and post-deployment.

A large, semi-transparent American flag serves as the background for the entire image. The stars are in the upper left corner, and the red and white stripes are visible across the rest of the frame.

# **Contact Your Local Preventive Medicine Service or Medical Support Unit for Additional Information**

**Prepared by:**  
**U.S. Army Center for Health Promotion and Preventive  
Medicine**  
**(800) 222-9698/ DSN 584-4375/(410) 436-4375**  
**<http://usachppm.apgea.army.mil>**

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